

Abstract

A device (10) for automatically separating the solid and liquid phase of a suspension (78) and for purifying magnetic microparticles (76) loaded with organic, in particular molecular biological or biochemical substances, comprises a process area (12) with devices, which move in a cyclic manner for transporting the magnetic microparticles (76) in the x-direction. A first guide (14) is used for supplying sample containers (P) in the x-direction and second guides (18) are used for supplying reagent containers (R) in the y-direction to the process area (12). The second guides (18) in the y-direction extend at an angle (α) of 30 to 150° to the x-direction. A carrier element (24), which can be moved back and forth in the x-direction, comprises carrier plates (24a, 24b, 24c) which can be lifted and lowered in the z-direction, individually and together, for magnetic or magnetisable transfer elements (28) arranged in a matrix shape. The reagent containers (R) can be positioned according to the grid of the transfer elements (28) which are preferably configured as rod-shaped permanent magnets or electromagnets, by introduction into the process area (12), taking place at an angle (α) and can be rejected by ejection in the same direction into a waste collector. The forward movement of the carrier element (24) in the x-direction takes place with the use of permanent magnetic rods as transfer elements (28) with loaded, pulled-up membranes (M) or with the use of rods-shaped electromagnets with the current switched on. The backward movement counter to the x-direction takes place with the use of permanent magnetic rods as transfer elements (28) without membranes (M) or with the use of rod-shaped electromagnets with the current switched off.

(Fig. 1)